AGENDA
CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)

December 5, 2002 MEETING-(916) 654-4715
111Grand Avenue (Parkview Rm. # 15-700), Oakland, 94623
TIME 9:00 AM

ORGANIZATION ITEMS

Estimated Time

1. INTRODUCTION 9:00

2. APPROVAL OF MINUTES (August 22, 2002 MEETING) 9:05

3. PUBLIC COMMENTS 9:10

At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties, have an opportunity to speak. At all times, please state your name, address, and business or organization for the record.

AGENDA ITEMS

4. PUBLIC HEARING

Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code (CVC), the Department of Transportation is required to consult with local agencies and hold public hearings.

02-7	Push Button For Crosswalk Warning Lights Watch For Traffic (R62E) Sign	(Continued) (Meis)	9:30
02-8	Fines Higher Sign (Red Light Violation Fine Sign) (Sign specifications & standards)	(Continued) (Meis)	10:00

5. REQUEST FOR EXPERIMENATION

02-10	Pedestrian Countdown Signal Heads (PCSHs) (To review ongoing experimentation with PCSHs)	(Continued) (Larsen)	10:30
02-14	Speed Feedback (Radar Speed) Sign (Experiment request by the County of Mendocino)	(Introduction) (Mansourian)	11:00
02-15	Radar Guided Dynamic Curve Warning System (Changeable Message Sign, Experiment request by Caltrans D5)	(Introduction) (Meis)	11:30
Lunch Break			**12:15-1:15**
00-3	Jake Brake sign (Experiment Agency-City of Auburn)	(Final Report) (Meis)	1:15

99-18	Ground Mounted LED Lights On Stop Bars (Experiment Agency-City of Anaheim)	(Final Report) (Meis)	1:45

6. DISCUSSION ITEMS

02-12	When Children Are Present (R72) Sign (Update by Caltrans)	(Continued) (Meis)	2:15
02-16	Traffic Signal Warrants 1 & 2 (Footnotes were not included in the 1996 Publication)	(Introduction) (Babico)	2:30
	Two Days Meeting	(Introduction)	3:00

7. INFORMATIONAL ITEMS

99-11	MUTCD Adoption By Caltrans (Update by Caltrans)	(Continued) (Meis)	3:15
02-13	Proposed Changes To Chapter 9 -Traffic Signals and Lighting (Update by Caltrans)	(Continued) (Fisher)	3:45
00-1	Bicycle Pavement Markings (Update by the City Consultant on Methodology to conduct exp.)	(Continued) (Tanda) (Borstel)	4:00
02-9	Mandatory Requirement Of Accessible Pedestrian Signals (update by Larsen)	(Continued) (Larsen)	4:15

8. TABLED ITEMS

01-11	Portable or Temporary Speed Display Sign (If the speed feedback sign is a traffic control device or not)	(Continued) (Meis)	

9. C0RRESPONDENCES/MISCELLANEOUS

10. NEXT MEETING

11. ADJOURN

ITEM UNDER EXPERIMENTATION

99-10 TACTILE PEDESTRIAN INDICATORS (Folkers)
(Experiment Agency-The City of Los Angeles) (Fisher)
Status: No update received.

99-12 SPEED STRIPING FOR SMART CROSSWALKS (Meis)
(Experiment Agency-Caltrans D7)
Status: Contract has been awarded and Construction will begin shortly.

99-13 ILLUMINATED PAVEMENT MARKERS ON MEDIAN BARRIERS (Meis)
(Experiment Agency-Caltrans D7)
Status: The project has not been funded yet.

00-1 BICYCLE PAVEMENT MARKING (Banks)
(Experiment Agency-City of San Francisco)
Status: The city has received approval to hire a consultant to do the study.

00-6 PEDESTRIAN COUNTDOWN SIGNAL HEADS (Banks)
(Experiment Agency-City of San Francisco)
Status: No further update, the interim report was submitted during the 01/31/02 meeting.

00-8 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of San Jose)
Status: The City of San Jose has submitted the final study report during the May 2002 meeting. The Committee allowed continues use of the devices until to reach a final decision.

00-9 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of Stockton)
Status: City is working on the final report.

01-3 PEDESTRIAN COUNTDOWN SIGNAL HEADS (Fisher)
(Citywide Experiment request by the City of Fountain Valley)
Status: The City has submitted their final report to the Committee and has received approval to expand the experimentation as a citywide.

01-4 TACTILE PEDESTRIAN INDICATORE WITH AUDIBLE INFORMATION (Tanda)
(Experiment request by the City of Santa Cruz)
Status: No update.

01-7 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of Oakland)
Status: The city has received approval from the HHWA and working to acquire funds in the FY 2002-03 budget.

01-9 IN-ROADWAY WARNING LIGHTS AT R/R CROSSINGS (Meis)
(Experiment requests by CPUC in cooperation Kern Co. & City of Fresno)
Status: CPUC is in process to hire consultant firm to conduct a study.

02-2 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of Berkeley)
Status: The installation of the PCSHs will start later part of the year 2002.

02-4 PEDESTRIAN COUNTDOWN SIGNAL HEADS (Larsen)
(Experiment request by the County of San Luis Obispo)

STATUS OF CALTRANS ACTION ON PAST ITEMS

Item 90-7 BICYCLE SIGNAL HEADS (BSH)
The Traffic Manual will be changed to reflect the BSH warrants, so that the public agencies will be able to use the Warrants to install these devices on their roadways.

Item 93-18 CROSSWALKS, SEQUENTIAL LIGHTING (In-Roadway Warning Lights (IRWL) at Crosswalks)
Caltrans developing Standard Special Provisions (SSP) for the IRWLs

Item 99-3 AUDIBLE PEDESTRIAN SIGNAL POLICY
Caltrans will work with the CTCDC, the California Council of the Blind (CCB) and with individuals who are interested in this item to resolve along with the Agenda Item 01-5, "Accessible Pedestrian Signals."

Item 01-1 U-TURN SIGNAL HEADS INDICATOR
Caltrans will develop appropriate standards to ensure visibility and make the U-turn signal head indicator an official traffic control device by inclusion in the Caltrans Traffic manual.

Item 01-6 SUPPLEMENT SIGNS ON CHANNELIZERS
Caltrans will work with the Committee on this item.

Item 00-4 USE OF RAISED PAVEMENT MARKERS IN TRANSVERSE PATTERN
Caltrans will take appropriate action on the recommendation made by the Committee.

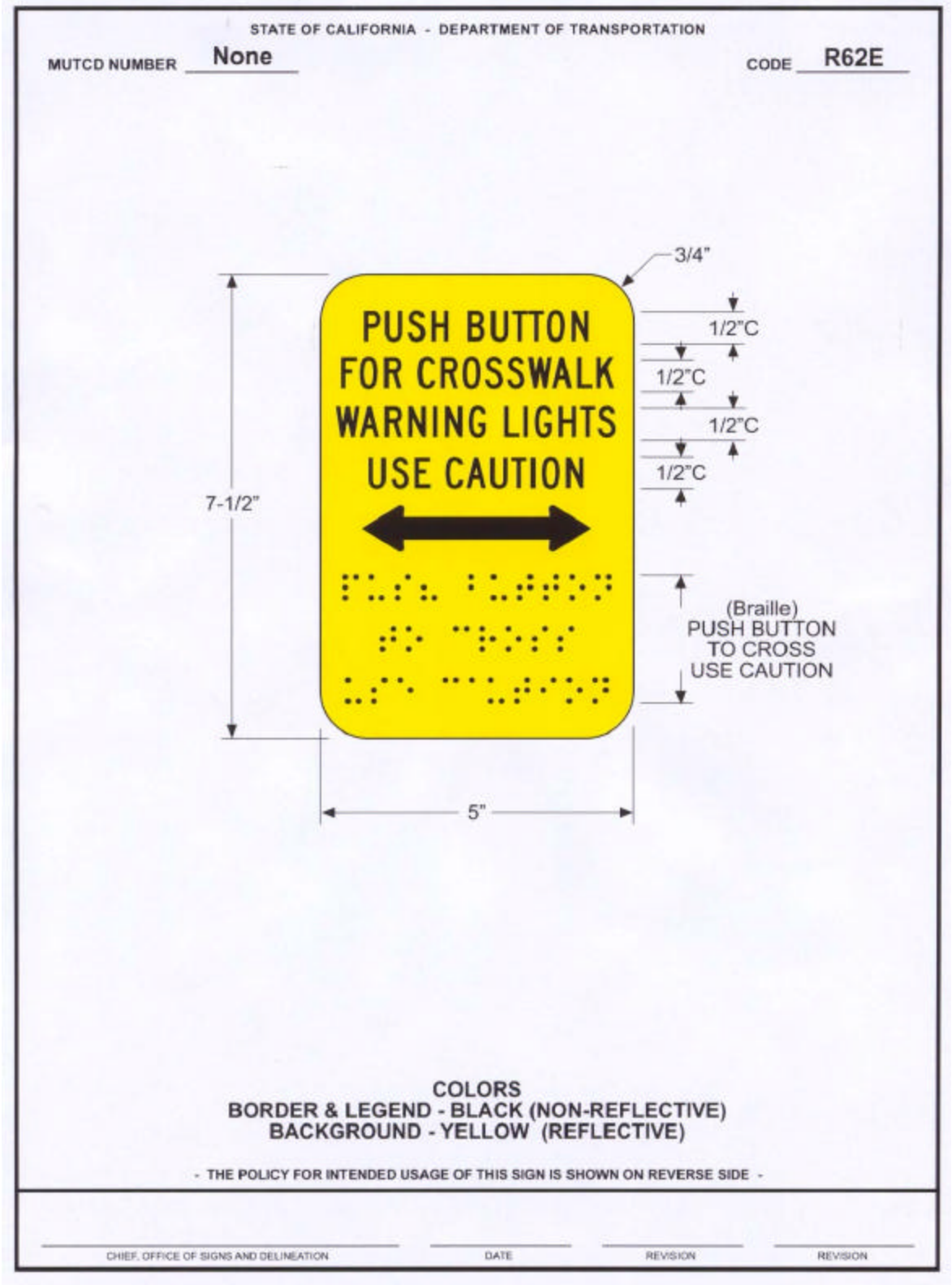
Item 01-5 ACCESSIBLE PEDESTRIAN SIGNALS
Caltrans will take appropriate action to adopt the MUTCD verbiage into the Traffic Manual.

Item 02-3 RIGHT EDGELINE
Caltrans will take appropriate action on the recommendation made by the Committee.

02-7 PUSH BUTTON FOR CROSSWALK WARNING LIGHT, WATCH FOR TRAFFIC (R62E)

P 1 of 1

The following is a revised sign message as suggested during the August 22, 2002 meeting.



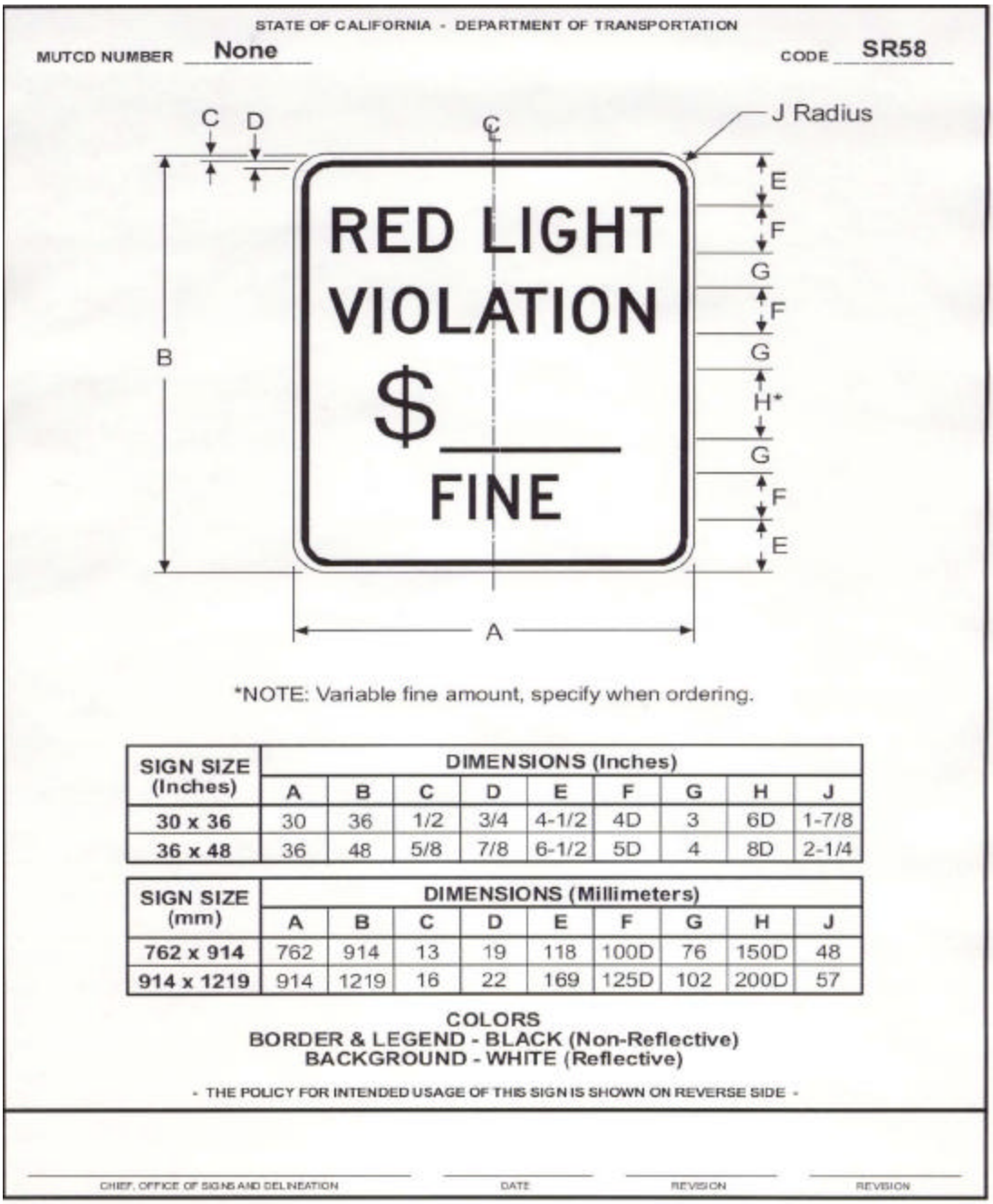
02-8 Fines Higher (Red Light Violation) Fine Sign

P 1 of 1

The following is a layout and policy for the "Red Light violation" sign

POLICY: SR58

The RED LIGHT VIOLATION $_____ FINE sign (SR58) may be used in advance of signalized intersections where a local agency has adopted an ordinance setting a specific fine amount for red light violations within it's jurisdiction. This sign may be placed on State highways with an Encroachment Permit when requested by the local agency.



SIGN SIZE (Inches)	DIMENSIONS (Inches)								
	A	B	C	D	E	F	G	H	J
30 x 36	30	36	1/2	3/4	4-1/2	4D	3	6D	1-7/8
36 x 48	36	48	5/8	7/8	6-1/2	5D	4	8D	2-1/4

SIGN SIZE (mm)	DIMENSIONS (Millimeters)								
	A	B	C	D	E	F	G	H	J
762 x 914	762	914	13	19	118	100D	76	150D	48
914 x 1219	914	1219	16	22	169	125D	102	200D	57

02-10 PEDESTRAIN COUNTDOWN SIGNAL HEADS P 1 of 1

During the May 8, 2002 meeting, Committee members suggested placing PCSHs on the agenda for the August 2002 meeting to discuss reports submitted by various agencies on the ongoing experimentation. The Committee believes that there is a demand to install these devices. The final reports submitted by the City of Fountain Valley, the City of San Jose and partial study presented by the City of San Francisco indicated that the devices were proven helpful in improving the pedestrian crossings.

During the August meeting, item was deferred until the December meeting.

02-14 SPEED FEEDBACK (Radar Speed) SIGN

EUGENE C. CALVERT
DIRECTOR OF TRANSPORTATION

COUNTY OF MENDOCINO
DEPARTMENT OF TRANSPORTATION
340 LAKE MENDOCINO DRIVE
UKIAH, CALIFORNIA 95482-9432
(707) 463-4363 FAX (707) 463-5474

FUNCTIONS
Administration & Business Services
Airports
County Surveyor
Engineering
Land Improvement
Roads and Bridges

5 September 2002

Mr. Davinder Singh
Executive Secretary for the CTCDC – MS 36
California Department of Transportation
P.O. Box 942874
Sacramento, CA 94274-0001

PROPOSAL FOR EXPERIMENTAL USE OF A NON-STANDARD TRAFFIC CONTROL DEVICE – ELECTRONIC SPEED DISPLAY SIGNS

The Mendocino County Department of Transportation (MCDOT) requests permission to conduct an experiment using Electronic Speed Display Signs as non-standard traffic control devices to determine their effectiveness in reducing vehicle speeds in rural school zones.

1. PROBLEM STATEMENT

The most frequently reported collision factor on the Mendocino County Maintained Road system is unsafe speed for conditions. The County is particularly concerned about speeding in school zones on some of our busier rural roads. Several schools are adjacent to collectors that carry commute traffic during the same time students are going to and from school. We frequently receive calls from school officials and parents concerning motorists who fail to observe the posted 25 MPH speed limit in school zones when children are present. Previous efforts to slow traffic in school zones has had little effect.

According to statistical data from the State Office of Traffic Safety (OTS), based on population Mendocino County has the 21st worst accident rate for pedestrians overall and the 37th worst for children under fifteen. OTS has awarded MCDOT a grant to purchase Electronic Speed Display Signs for installation at selected school zones. Distribution of the funds is contingent upon our receiving approval from the California Traffic Control Devices Committee to use these experimental devices.

2. PROPOSED SOLUTION

To reduce the hazard to students from speeding vehicles, Electronic Speed Display Signs will be installed at the boundaries of three school zones to alert drivers to the speed of their vehicles.

3. OBJECTIVE

The objective of this experiment is to determine the effectiveness of Electronic Speed Display Signs at reducing vehicle speeds in rural school zones when children are present.

4. EXPERIMENT SCHEDULE

- Pre-Installation Evaluation Period.....October and November 2002
- Installation.....December 2002
- Experiment Period.....January to June 2003
- Evaluation Period.....July to September 2003

Thank you for considering our request for experimental designation. If you have any questions, comments or suggestions, please call me at (707)-463-4351. Additional contact information is provided in the attached detailed proposal.

Yours truly,

Stephen Ford, RCE
Civil Engineer

Attachment

cc: DOT File 12-11

F:\Shared\WP\SHF\OTS\CTCDCexperimental.doc

PROPOSAL TO THE CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE FOR EXPERIMENTAL USE OF A NEW TRAFFIC CONTROL DEVICE : ELECTRONIC SPEED DISPLAY SIGNS

SCOPE

The Mendocino County Department of Transportation (MCDOT) proposes to install a total of six Electronic Speed Display Signs, two at each of three school zones. We wish to determine the efficacy of such signs in rural settings. Purchase of the signs will be funded by the State Office of Traffic Safety. Installation and evaluation will be by the County Department of Transportation. The tentative locations are:

SCHOOL	ROAD	FUNCTIONAL CLASS
Eagle Peak Middle School	CR 237 West Road	Major Collector
Potter Valley Elementary & High Schools	CR 245 Main Street	Major Collector
Mendocino Elementary School	CR 408 Little Lake Road	Minor Collector

WORK PLAN

Installation
The Electronic Speed Display Signs will be installed above Installation C school zone signs. They will replace existing Installation C's at the same locations. The units contain their own radar and will be powered by solar power arrays mounted at the top of the posts similar to rural call-box installations.

Evaluation
Effectiveness will be determined by comparing radar speed data gathered at the sites prior to installation with radar data collected during the experiment period listed below.

Schedule
The schedule for testing is:

- Pre-Installation Evaluation Period.....October and November 2002
- Installation.....December 2002
- Experiment Period.....January to June 2003
- Evaluation Period.....July to September 2003

EVALUATION PROCEDURES

The County of Mendocino requests CTCDC approval of the following preliminary evaluation plan. Evaluation procedures may evolve or be supplemented during the test period.

1) Installation Documentation will be prepared by MCDOT personnel.

2) Speed data will be collected and analyzed by or under the direction of MCDOT personnel.
3) Field observations will be conducted to help evaluate the effectiveness of the installations. Videotaping may be used to document driver response for reporting to the CTCDC and other interested public agencies.

Before and after studies will be conducted at all three sites where the Electronic Speed Display Signs are to be installed. Measures of effectiveness will include:

- Radar speed surveys
- Evaluation of vehicle/pedestrian and vehicle/vehicle conflicts within the school zone
- Evaluation of driver and student responses to the signing.

ADMINISTRATION

Sponsoring Agency: Mendocino County Department of Transportation

Contact Information: Stephen Ford
Civil Engineer
Mendocino County Department of Transportation
tel: (707)-463-4351
fax: (707)-463-5474
e-mail: fords@co.mendocino.ca.us

Manufactures: Vendor(s) to be determined prior to December 2002

02-15 Radar Guided Dynamic Curve warning System P 1 of 7

ST AT E O F C AL I FORNI A------- BUSI NESS, T RANSP ORT AT I ON A ND H OUSI NG A GENCY GRAY D AVI S, G o v e r no r
DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
TELEPHONE (805) 549-3111
TTY (805) 549-3259
Http://www.dot.ca.gov/dist05

October 9, 2002

Mr. Gerry Meis
Office Chief, Signs Delineation and Permit Branch – MS 36
California Department of Transportation
1120 N Street
Sacramento, CA 95814

PROPOSAL FOR EXPERIMENTAL USE OF A NON-STANDARD TRAFFIC CONTROL DEVICE – RADAR GUIDED DYNAMIC CURVE WARNING SYSTEM

The California Department of Transportation (Department) requests permission to conduct an experiment using a Radar Guided Dynamic Curve Warning System (DCWS) as a non-standard traffic control device.

1. PROBLEM STATEMENT

Route 17 is a four-lane highway in Santa Cruz County and is the main access from Route 1 in the City of Santa Cruz to the Route 280/880 junction. Route 17 has a rural feel with minimal or no shoulders in some areas. The City of Santa Cruz attracts weekend motorists that are not familiar with the curvature of Route 17. Many motorists heading southbound are descending the summit at high rates of speed and are not able to judge the tight radius curve that follows the tangent. The collision rate for this curve over the last five years has been higher than the statewide average for similar curves. The actual collision rate from January 1, 1997 to December 31, 2001 was 1.99 collisions per million vehicle miles (MVM) traveled while the statewide average for similar curves was 0.83 collisions per MVM (please see the attached collision diagram and data for this curve). A future project in this area will address the geometric deficiencies of the curve, however, the project is limited to shoulder widening and will not occur for a number of years.

2. PROPOSED SOLUTION

The Department wishes to participate in the experimentation of a Radar Guided DCWS. The DCWS would consist of a Changeable Message Sign (CMS), a radar speed detection unit, and a Closed Circuit Television (CCTV) camera. The CMS would display a message similar to “45

MPH Curve Ahead". Using the installed radar, the sign would then switch to "Your Speed, 70 MPH" to warn the driver that they are approaching the curve at a high rate of speed. The DCWS would be operated remotely by the District 5 Transportation Management Center (TMC) in San Luis Obispo. The system would be configured to allow modification of the CMS message by TMC operators. The CCTV camera would be used to verify the CMS functions. Eventually, the Department would like to gain approval for these systems at other locations where driver safety is a concern.

3. OBJECTIVE

The objective of the test will be to determine the effectiveness of the Radar Guided Dynamic Curve Warning System in slowing vehicle speeds and improving driver safety.

4. EXPERIMENT SCHEDULE

• Pre-Installation Evaluation	January to April 2003
• Installation	May 2003
• Experimental Period	May 2003 to May 2004
• Evaluation of Results	September 2004

Thank you for considering this request for a Radar Guided Dynamic Curve Warning System. Please see the attached letter of support from Linda Wilshusen, Executive Director for the Santa Cruz County Regional Transportation Commission, collision diagram and data, and the attached photos. The Department is looking forward to receiving a response from the Committee. If you have any questions or need further information, please do not hesitate to call me at (805) 549-3017.

Sincerely,

Nevin Q. Sams
District Traffic Safety Engineer

C: Linda Wilshusen, Executive Director, SCCRTC
Captain Christopher Jenkins, Santa Cruz Area CHP
Captain Ed McLaughlin, San Jose Area CHP
Lauren Wonder, Caltrans District 4
John Thomas, Caltrans District 4
Gregg Albright
Alex Kennedy
Mike Galizio
Paul McClintic
Julie Gonzalez

"Caltrans improves mobility across California"
DEPARTMENT OF TRANSPORTATION P 3 of 7
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
TELEPHONE (805) 549-3111
TTY (805) 549-3259
http://www.dot.ca.gov/dist05

PROPOSAL TO THE CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE FOR EXPERIMENTATION OF A NEW TRAFFIC CONTROL DEVICE: RADAR GUIDED DYNAMIC CURVE WARNING SYSTEM

SCOPE

The California Department of Transportation (Department) proposes an experiment using a Radar Guided Dynamic Curve Warning System (DCWS). The system will be used to slow vehicle speeds and improve driver safety on Route 17 in Santa Cruz County.

The Radar Guided DCWS is proposed as a pilot program and should help to slow vehicle speeds as they began their descent from the summit. The DCWS has been used in other districts within the Department. District 2 currently has 5 such systems in operation. The system consists in general of installing a Light Emitting Diode (LED) Changeable Message Sign (CMS) with an attached radar unit and a Closed Circuit Television (CCTV) camera. Unlike extinguishable message signs, the CMS's can be used to:

(1) Display Posted Speed
(2) Display Advised Speed
(3) Display Driver's Actual Speed
(4) Display other information such as, "Accident Ahead, Slow Moving Traffic Ahead", etc.

Display

The display is capable of full size static and dynamic graphics and messages. The display will be a minimum size of 1.7 m by 2.9 m and a maximum size of 2.0 m by 3.6 m.

Power Source

The system will operate using a 120 VAC commercial electrical service. The unit will include the required converter to provide reliable DC power to meet the service demands of the sign system. Electrical service to the installation location on Route 17 has already been established.

System Controls

The sign will be controlled by an on-board computer, capable of storing a minimum of 350 messages, 40 pre-programmed graphic messages, 26 graphic displays of traffic control symbols from the Manual of Uniform Traffic Control Devices (MUTCD) and the sign operation software.

Sign Operation Software P 4 of 7

The sign operation software (SOS) will provide operator interaction with the sign system and will include a modem to allow remote access utilizing a personal computer via a landline telephone.

CCTV

The DCWS will include a CCTV. The CCTV will be used to verify proper functioning of the CMS as well as for the TMC to gather general traffic information.

Radar Speed Detection

The DCWS will include a radar unit consisting of an externally mounted transceiver (gun). The system will have three modes of operation:

1. Radar Only Mode: When the system radar trigger speed has been exceeded, the sign system will continuously display a special sequence of messages that have been pre-programmed into the computer. The actual vehicle speed will be optionally displayed along with any warning messages.

2. Radar Trip Mode: A normal sequence of pre-programmed messages will be displayed until the radar trigger speed has been exceeded. Once triggered, the sign system will display a special sequence of pre-programmed messages as well as the detected speed of the motorist.

3. Radar Disabled Mode: The sign system will continuously display a sequence of messages which have been pre-programmed into the computer without being interrupted by the radar trigger mechanism.

Remote Operation

The remote system will provide two-way, fully functional interaction and allow for controlling and monitoring sign activity without traveling to the sign. The remote communications software package will enable the sign to alert the Traffic Management Center (TMC) of a failure of the sign's operation, and provide the ability to notify a secondary or tertiary host (such as CHP) in the event that the primary host is inactive. This will also allow re-programming of the sign in the event of an overriding emergency situation. The installed CCTV camera will aid in this process and will also allow the TMC to make other observations such as current traffic conditions.

This request is for permission to purchase and install such a system at approximate Post Mile 11.2 on the southbound side of Route 17 in Santa Cruz County. Currently, a 45-MPH oversized sign with flashing yellow beacons exists just south of this location. The existing sign will remain in place at this time, however, the flashing yellow beacons may be removed after further evaluation.

WORK PLAN P 5 of 7

Installation

The Radar Guided DCWS will be installed on the southbound side of Route 17 at approximate Post Mile 11.2. This location is on the tangent section of the sustained grade off the summit and is where vehicles begin to pick up speed. There is an existing oversized, 45-MPH sign with flashing yellow beacons at this location now. The sign will remain in place at this time, however, the flashing yellow beacons may be removed after further evaluation.

Evaluation

Effectiveness and acceptance will be measured in accordance with the time period and evaluation procedures shown below.

Time Period

The schedule for testing is as follows:

- Pre-Installation Evaluation January to March 2003
- Installation April 2003
- Experimental Period April 2003 to April 2004
- Evaluation of Results August 2004

EVALUATION PROCEDURES

The Department requests that the Committee approve the preliminary evaluation plan outlined below. Other criteria and procedures may evolve during the evaluation period. Any additional methods of evaluation or changes in procedures will be discussed in the scheduled reports submitted to the project sponsor and the Committee.

1. Installation Documentation – to be prepared by the Department

2. Maintenance Recording – to be performed throughout the life of the experimentation period. A maintenance log will be created for the DCWS. Periodic inspection will be performed and logged by the Department's maintenance crew or the CHP.

3. Before and after collision data will be prepared by the Department's Traffic Safety Division.

4. Observations will be conducted to determine the effectiveness of the system. Videotapes and digital photographs may be used to help document the operation of the system and for reporting to the Committee and other interested parties.

Measures of effectiveness and acceptance before and after the testing period may include, but are not limited to the following:

- Comparison of the total number of incidences before the installation with the number of incidences after the installation

• Comparison of the number of speeding violations issued before the installation with the number of speeding violations issued after the installation

ADMINISTRATION

Sponsoring Agency:	CA Department of Transportation, Traffic Safety, District 5
Contact Information:	Dario A. Senor, P.E., Transportation Engineer 50 S. Higuera Street San Luis Obispo, CA 93401 Tel: (805) 542-4793, Fax: (805) 549-3045
Manufacturers:	Vendors to be determined by February 2003
Installations:	Contractor to be determined

SCCRTC

SANTA CRUZ COUNTY REGIONAL TRANSPORTATION COMMISSION
1523 PACIFIC AVENUE, SANTA CRUZ, CALIFORNIA 95060-3911 • 831/ 460-3200 • FAX 831/ 460-3215

June 17, 2002

Gregg Albright, Director
Caltrans District 5
50 Higuera Street
San Luis Obispo, CA 93401

RE: Support for Application to the California Traffic Control Devices Committee for Dynamic Curve Warning Signs on Highway 17

Dear Director Albright:

The Santa Cruz County Regional Transportation Commission (SCCRTC) is pleased with the safety improvements which have been made to Highway 17 through the "Safe on 17" Task Force. As you know, one of the suggestions of the "Safe on 17" Task Force was to add dynamic curve warning signs at key locations on Highway 17. Its our understanding that the District 5 Traffic Operations Division is working on an application to the California Traffic Control Devices Committee for permission to deploy the signs. The SCCRTC Traffic Operations System (TOS) Oversight Committee strongly supports the Caltrans District 5 application for deployment of dynamic curve warning signs on Highway 17 and urges the California Traffic Control Devices Committee to promptly approve the application.

The TOS Oversight Committee has been working with Caltrans Districts 4 and 5, the California Highway Patrol Coastal Division and Golden Gate Division, local law enforcement and public works departments and community members to improve the operations and safety of our highways through Intelligent Transportation Systems (ITS) applications. Highway 17 has a system of changeable message signs (CMS) and highway advisory radio (HAR) to inform motorists already on the highway about existing incidents. The CMS and HAR system helps reduce secondary incidents and keep incident related congestion to a minimum. A system such as the dynamic curve warning signs, which has the potential to reduce primary incidents, would complement the existing CMS and HAR system and contribute to a safer highway.

If there is anything we can do to assist in the approval of the application to the California Traffic Control Devices Committee, please contact me at (831) 460-3213 or Luis Mendez of my staff at (831) 460-3212.

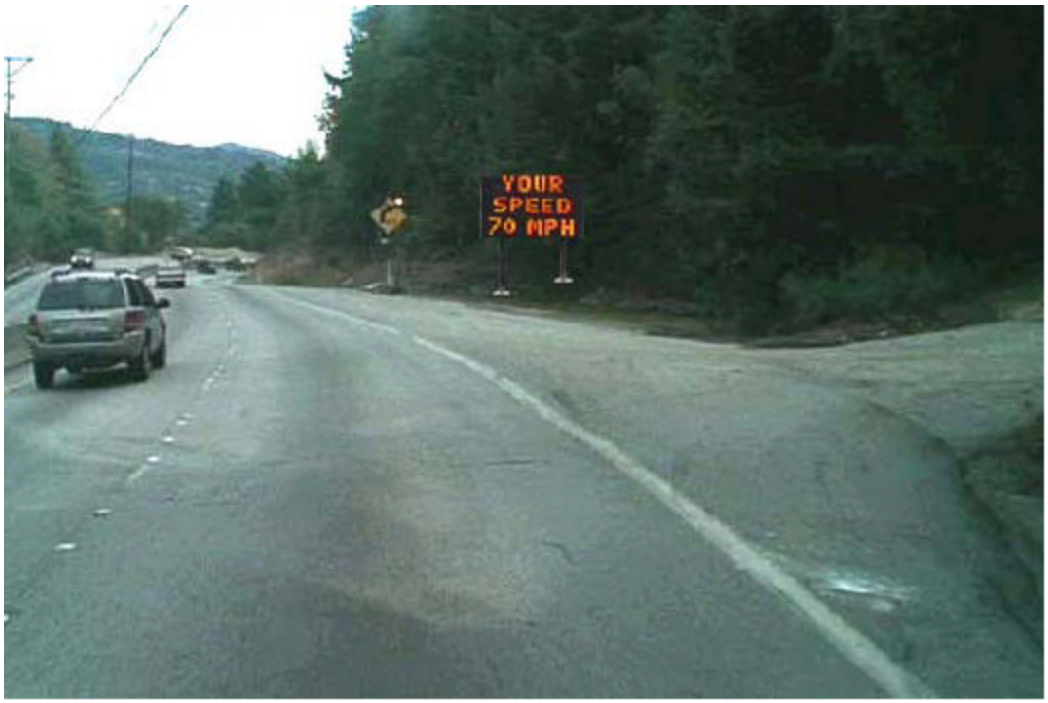
Sincerely,

Linda Wilshusen
Executive Director

WWW.SCCRTC.ORG
I:\tos\fon17\dynamicsigns.doc
cc: Steve Price, Caltrans District 5

MEMBER AGENCIES: SANTA CRUZ METROPOLITAN TRANSIT DISTRICT, COUNTY OF SANTA CRUZ, CALTRANS, CITIES OF CAPITOLA, SANTA CRUZ, SCOTTS VALLEY, WATSONVILLE

P 7 of 7



00-3 Jake Brake Sign P 1 of 2

The City of Auburn submitted a final report to the Committee. The Committee will accept the report and discuss future action. The report is as follows:

CITY OF AUBURN JAKE BRADE SURVEY SUMARY AND RECOMMENDATION

The Auburn Police Department conducted a post-test of trucks using Jake Brakes at the same locations as pre-tests. During random 24 hour periods the total number of trucks were counted including those that used the Jake Brake and trucks that did not. The noise level of each truck was also recorded. No interviews were conducted of truck drivers. Following are the results of the post-test and comparison to the pre-test:

Pre-test Summary Hiway 49

38 trucks measured using Jake Brakes
Average dBL = 77
Average dBL between 2300 and 0700 = 81

Trucks using the Jake Brake as % of the total trucks = 21%
Trucks using the Jake Brake between 2300 and 0700 = 36%

Post-test Summary Hiway 49

190 trucks were surveyed
Average dBL = 73.55
Average dBL between 2300 and 0700 = 67.4

Trucks using the Jake Brake by % = 29%
Trucks using the Jake Brake Between 2300 and 0700 = 18.5%

Pre – test Summary of I-80

1,410 trucks measured using Jake Brakes
Average dBL = 77
Average dBL between 2300 and 0700 = 88

Trucks using Jake Brake as % of total trucks = 32%
Trucks using Jake Brake between 2300 and 0700 = 56%

Post – test Summary of I-80

559 trucks were surveyed
Average dBL = 73.22
Averatage dBL between 2300 and 0700 = 70.84

Trucks using Jake Brake by % = 42%
Trucks using Jake Brake 2300 to 0700 by % = 21.2%

Neighborhood Interviews

The Police Department conducted random interviews of persons who live in the immediate area of the I-80 freeway and Hiway 49 most affected by traffic noise. Half of the individuals interviewed said that the noise from Jake Brake use was about the same, and half said that the noise was less.

Conclusion

Information gathered in the post-test survey seems to indicate that the average noise level caused by trucks at both locations surveyed reduced, and the total percentage of trucks using Jake brakes increased. However, there was a substantial drop in both noise level, and trucks using the Jake brake during the hours of 2300 to 0700. This information suggests that there was a significant change during the nighttime possibly attributable to signage posted in the survey areas.

RECOMMENDATION

From the results of the post – test it is recommended that signage regarding Jake Brake use is posted in area's where Jake Brake noise most affects residential areas during nighttime hours.

99-18 Ground Mounted LED Lights On Stop Bars

The City of Auburn submitted a final report to the Committee. The Committee will accept the report and discuss future action.

DISCUSSION ITEMS P 1 of 3

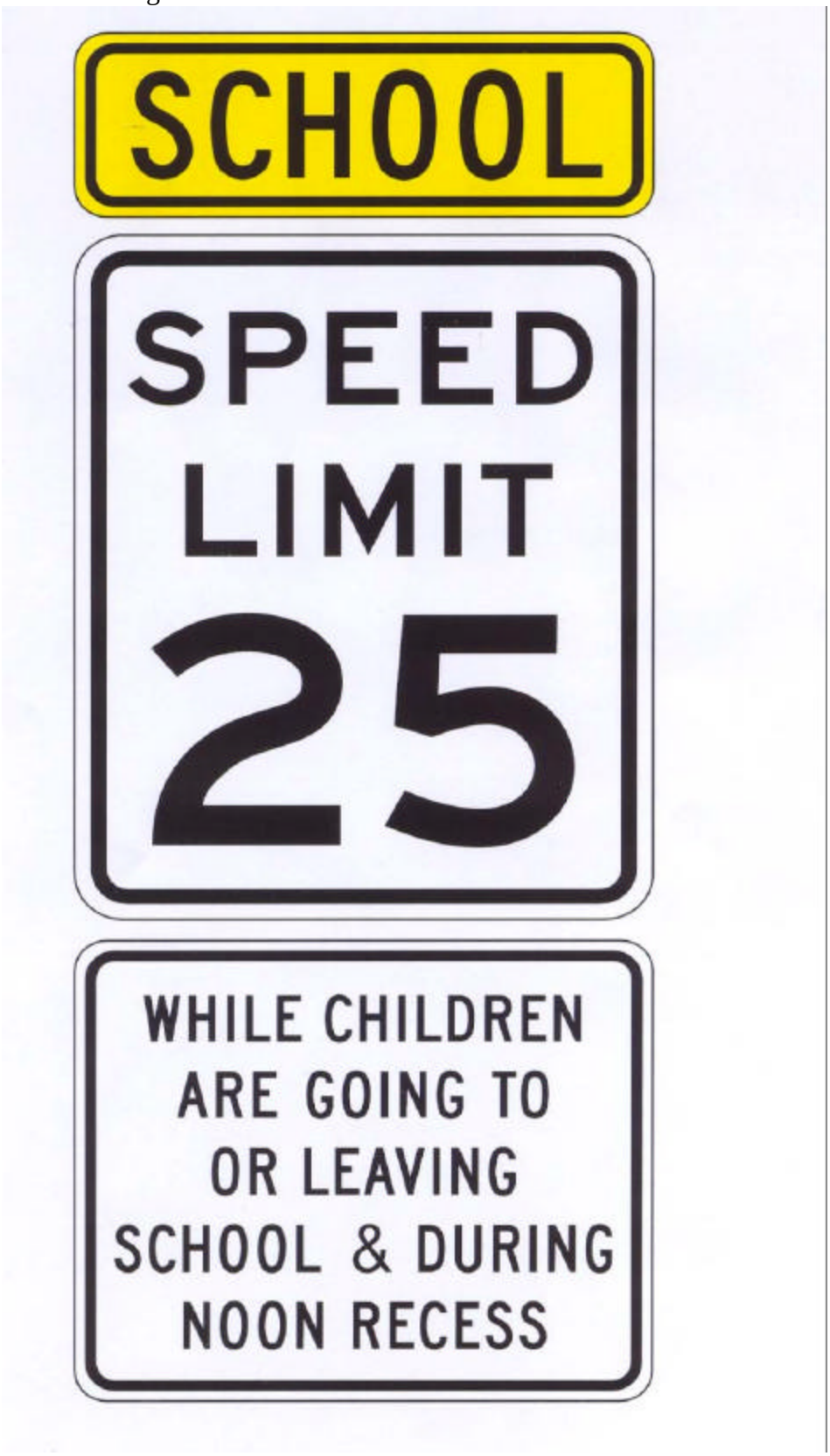
02-12 When Children Are Present (R72) Sign

The following is a text from the California vehicle Code (CVC) Section 22353 (b):

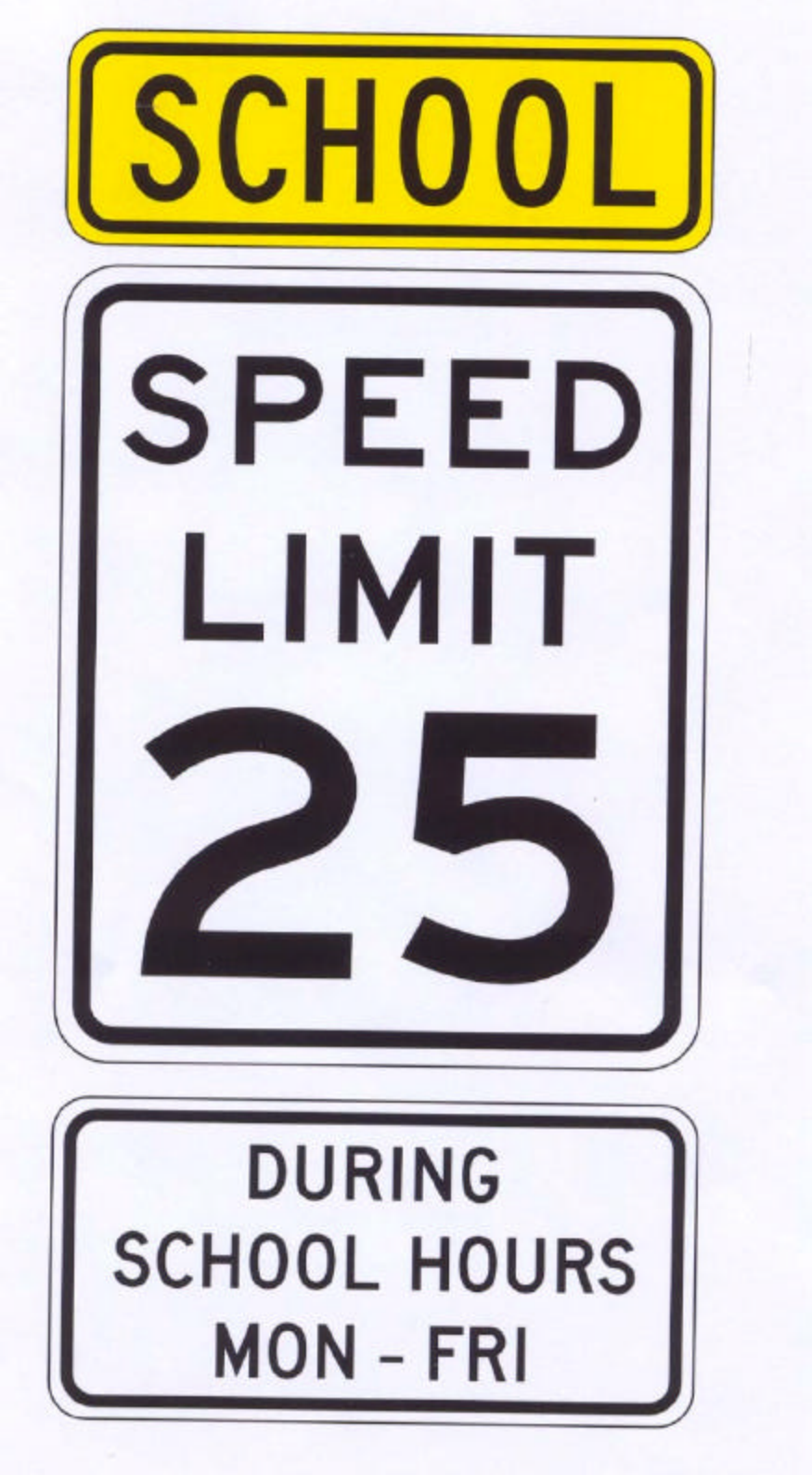
> (B) When approaching or passing a school building or the grounds thereof, contiguous to a highway and posted with a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching or passing any school grounds which are not separated from the highway by a fence, gate or other physical barrier while the grounds are in use by children and the highway is posted with a standard "SCHOOL" warning sign. For purposes of this subparagraph, standard "SCHOOL" warning signs may be placed at any distance up to 500 feet away from school grounds.

The CVC allows installation of signs for differing hours, such as, “going to School”, noon recess hours”, and “leaving hours” or “school hours” from beginning to end. This is also consistent with the MUTCD.

The following two alternatives are consistent with the current CVC: Alternative 1 P 2 of 3



Alternative 2 P 3 of 3



02-16 Traffic Signal Warrant No. 1& 2

1996 Traffic manual

Figure 9-1
TRAFFIC SIGNAL WARRANTS

DIST _____ CO _____ RTE _____ KPM _____

CALC _____ DATE _____
CHK _____ DATE _____

Major St: _____ Critical Approach Speed _____ km/h
Minor St: _____ Critical Approach Speed _____ km/h

Critical speed of major street traffic > 64 km/h ☐ or ☐ } RURAL (R)
In built up area of isolated community of < 10,000 pop. ☐ URBAN (U)

WARRANT 1 - Minimum Vehicular Volume **100% SATISFIED** YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)										
	U	R	U	R							
APPROACH LANES	1		2 or more								Hour
Both Apprchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)							
Highest Apprch. Minor Street	150 (120)	105 (84)	200 (160)	140 (112)							

WARRANT 2 - Interruption of Continuous Traffic **100% SATISFIED** YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)										
	U	R	U	R							
APPROACH LANES	1		2 or more								Hour
Both Apprchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)							
Highest Apprch. Minor Street	75 (60)	53 (42)	100 (80)	70 (56)							

WARRANT 3 - Minimum Pedestrian Volume **100% SATISFIED** YES ☐ NO ☐

REQUIREMENT	FULFILLED
Pedestrian volume crossing the major street is 100 or more for each of any four hours or is 190 or more during any one hour; AND	Yes ☐ No ☐
There are less than 60 gaps per hour in the major street traffic stream of adequate length for pedestrians to cross; AND	Yes ☐ No ☐
The nearest traffic signal along the major street is greater than 90 m; AND	Yes ☐ No ☐
The new traffic signal will not seriously disrupt progressive traffic flow on the major street.	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

1991 Traffic manual

Figure 9-1
TRAFFIC SIGNAL WARRANTS

DIST ____ CO ____ RTE ____ PM ____

CALC _____ DATE _____
CHK _____ DATE _____

Major St: _____ Critical Approach Speed _____ mph
Minor St: _____ Critical Approach Speed _____ mph

Critical speed of major street traffic > 40 mph ☐ or ☐ RURAL (R)

In built up area of isolated community of < 10,000 pop. ☐ URBAN (U)

WARRANT 1 - Minimum Vehicular volume

100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or more	
Both Approhs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)
Highest Approh. Minor Street *	150 (120)	105 (84)	200 (160)	140 (112)

Hour

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or more	
Both Approhs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)
Highest Approh. Minor Street *	75 (60)	53 (42)	100 (80)	70 (56)

Hour

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 - Minimum Pedestrian Volume

100% SATISFIED YES ☐ NO ☐

REQUIREMENT	FULFILLED
Pedestrian volume crossing the major street is 100 or more for each of any four hours or is 190 or more during any one hour; and	Yes ☐ No ☐
There are less than 60 gaps per hour in the major street traffic stream of adequate length for pedestrians to cross; and	Yes ☐ No ☐
The nearest traffic signal along the major street is greater than 300 feet; and	Yes ☐ No ☐
The new traffic signal will not seriously disrupt progressive traffic flow on the major street	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.